

Figure 1: Predicted protein sequence of mGy12 (SEQ ID NO:1)

1 . MSSKTASTNS IAQARRTVQQ LRLEASIERI KVKASADLM SYCEEHARSD
51 PLLMGIPTSE NPFKDKKTCI IL*

Figure 2: cDNA sequence of mG γ 12 variant 1 (SEQ ID NO:2)

1 CTAGAATTCA GCGGCCGCTG AATTCTAGGC GACGACGGCG AAGAGTGAGT
51 GCCAAGGTTT ATATGGGAAG GACTTTGGGG TGAGCATCTT CTCTATTTC
101 AGCTGGCTTT TCTGATTTTC AGAAAGAAGA CTCATCAAAG ATGTCCAGCA
151 AGACGGCAAG CACCAACAGC ATAGCCCAAG CCAGGAGAAC TGTGCAGCAG
201 CTGAGATTGG AAGCCTCCAT CGAAAGAATA AAGTCTCAA AAGCATCAGC
251 AGACCTGATG TCATACTGTG AGGAGCATGC CCGGAGCGAC CCCCTGCTGA
301 TGGGCATACC GACCTCAGAA AACCCGTTCA AGGATAAGAA GACCTGCATC
351 ATCTTATAGT GGACCAGGAA GCGCCCCTTG CCTCTTAACG CAAACCACAG
401 CAGCAACCTG AAGGGATTCC TTCAGCTTAC CTGGTAACCA CAGCTAGTAA
451 CTAAACACCC CTTCTCTCGG AATAATAGAC CCTGAAGTCT CTCTTTTTC
501 AGTTGTCCTT TCTTCACCCT TTAAGTATT AATACAGAAT AACAACTTA
551 TTTTCTATTT GATAACTATG GTATCATATT GGGTACTGT ATAAGGAAAA
601 TGGCAGGGGA GTTGTGGGAA GCTTGTCTTT ACAAATATA ATTGATTAA
651 ATATGTCAAG ACCTACATTG TCTAAGCACC GGCAAATTAA AATGTCGAGA
701 ATCACTTCAG TCAAAAACCT TTATATTCTG TTCTTAATAA TGTTTGTGCC
751 AACCTATATC CCATGTAAGG GATCTGGGGA GGAGGCATGT GTCTACAACC
801 ATACCTTTTT GCACTATGGG CACTAACCAC CCTGAACTT CCTGCGGTAG
851 CTCCCTCCCT TCAGAGTTAC ATCATTATCC TGACTCTGTG TAGGTAAATT
901 TCCGTGAAAT TTTTGTACAA AAAAAAGTA ATGAAAGAAC GTTGCAAGA
951 TCATCTGCAT TATAATGAGT TGATGCTGTT CTCCTCCTC TCTTGGAATT
1001 GTGCTGGCCC CTTAGTCTAC AATAAACTGT GCCAATTAAA AACCTAAGGC
1051 TAAAACTGAA AGCCCTTTGA TGGGGTCTTA ACTCATATCA GTCATTTGGG
1101 CTTCTCTGAT CCTGAGGCTA AGAAAGGGGA AGAGACCCTC AGGAGGCAGC
1151 TTCCACTCCA GGGCTCTTGA TCTCTGCTGG ATTGGGGGTG GCCACCTCAG
1201 AAACCTCCAC CCTCATGACT GGAATGGAAG AGGGGACCGA GAGCCTCACA

1251 ATCTCGGAGA GGGAGGAGAA ATTCTTAAAA ACAGCTGCTC TCCTGCGCCC
 1301 AGCTTCACAG GCAGCCCTGC CCCTTTCTCC TCACCAGCAT GGTACCTGCC
 1351 CTTACTGCTA GAGCAGCTGC TTGTAGAGGG ACATTCCCTC CTTCCCAGTT
 1401 TTAAGTGGTG GACCACAGTG GGGGGAAAAA CATTCAAGCG ATATAAAGAC
 1451 ACTTGGGCTC TTTGCAGATG CCTATACTTC CAACACTACC ATGTCACCAA
 1501 ACCACCCTGG GGGAGGGCCC TTCCAAAGGG AGGCTTGCTA GTTTCAGCGT
 1551 CTAGCAGTTG GGTCTCACT TTTACTCCAA TTGTGAAAT AGCCCACGTA
 1601 CCCTCGCAGT GTCCAGTAGG GATCCAGAG GCACATAACC AAGAAAGGAT
 1651 TTTGACTTTG TCACAGTGAC TATTTAAAT AATCTATTG AAGTCCAAAC
 1701 CAAACACAAA GCCTGTGATA TTTTAGGTTA TTAAGGTAAC TGCTAATGAA
 1751 GGATTTTTAA AAGTGTCTC AAAAAGGACT TAGCCCCGGG AGTTGTTTAT
 1801 AAAATTTCCC CCACTTGAT ACAGTGTGCA CTAAGAGAAA ATGTATTTTA
 1851 ATATCTAATG CCTGGGCTCT GAGCGTCATG CTTCTGGTG GTAAACATGC
 1901 AGTCCTGTTC CTAAGTGA CTAGAGGCATC AGAATTTCTC CACGTTACCC
 1951 ATCTGCTTGG CACTCGGAAC TGAGCGTGTG AAATCCATAG CGCTGCCAC
 2001 AACCTGTTCT CACTGCTTAG CTCCAGCTG GATTAAAGAC ACCTGCTCAG
 2051 GCGGGAGAGA GAGAGAGAGA GCGAGCTTTT ACCTTGGAAG AGGTAAAGAT
 2101 GGAAATGTAC ACCAAAAAAG ACAATTTTTA CATTTAATGG AACATTCTTT
 2151 TTTTTTACAA GTATATTTT CTAAGTATAG TTTCAGAACA CTAATCTTAT
 2201 ATTCACTCTA ATCTTAAACA TGTCTCTTTA AATATTTATA AGGCAGTTTA
 2251 TTACAGAATA TTTTCATGCA ATCATGTGCA CATTATTGGT AGCAAACATA
 2301 GTATATCCTT TAGTACTTTA GCATATTTTT GTTAAATAC TTTTAATGGT
 2351 AAGAAATGAA CTTGAGGTCC CAGGAGGTTT TGTTCCTTT TCATTGATTA
 2401 GAGACAATAA ATATCTTGTA ACTTCCTAAC CAGATCTGAG CTGTGCTCAC
 2451 AATAATAATA ATGAAATCAG ATTCTTTGAT GCTGGACTCA GGAGGGAAAT

1251 1301 1351 1401 1451 1501 1551 1601 1651 1701 1751 1801 1851 1901 1951 2001 2051 2101 2151 2201 2251 2301 2351 2401 2451

2501 CATTAGCCAA CTGTTGACTT ACTTATAGCT AGATGTCTAT GTGAGAAAGT
2551 ATAATATATA TATATACACA TATATATGAC ATGTAAGAGT CACTTTTATT
2601 TATCTGTCTT TGTTCACTTA TGAAGCCGGT AACTGCAGCA GTATGTTGGT
2651 GATGTCATGA TGCACAGAAG TCCCATGTGG AGTGTTTTTC CCACACTGAC
2701 AACTTGGCCT CCTTTCTGTG TGTTCACTCT GTTGTCTGAA CTAACACTCC
2751 CGCGAGCACT ATACTCTTTA TACTCTGATC CCCCTAGTTC ATCTTAAATT
2801 TGTCTGTGGC CCTGGCAAGA TAGCGTACAC AAGATTCCAT GACTCCAGAG
2851 CATCTTGAAG AAACATACAT ATTTTGAAAG AGGGGAAATG TAGCAGATAG
2901 TTCACAAGCT GCGGGTTGTA GCTAAATATT CCATTTCTTT GAAATCATGT
2951 TTCTAAATTC TTTACCATCA GAAAGAAAAG GAGTGTGATA CACTTTC AAG
3001 GGAAGGCTTG GTCTGCGTTT TCTGTGTTTG GATTATTTTT ATACTTTGCT
3051 GATCTTTAAG CTATCCATGG GGGAAATTTT ATACCAACGA GTTAATAATT
3101 CTCATTATC GTTTACACAA TGTAACATGT GTCATACTGG GGCCAGCGAG
3151 ATGGCTCAGT AGGTAAAGGT GCTTGATGCT AAGCCCGCA GCCTGTGTTT
3201 CATCTACAGG ATGCACAACA TAAAAGAAAA GATCTGATTC CCACAGGTTC
3251 TCTTCTGACC TACACACACA CACACTAAAA TAACATTAA AAATATGTGC
3301 CAAATTATAT TTGTTTCGGT GCCACCTTCC ACCAGCTTAC CACTACGGTA
3351 GAACTGTCAA ATTCATCTCC CTGAATTIGT CTTAAAGGGG TGTCCATGCA
3401 CAGGCCCAAG AGTCACCTCC AATGAAATAA ATGTAATACT GAAGTATGCC
3451 ATGATGTTTG TTGTTTTCTT TCATCGTAAG CCTGTAAGCA GGAAAAATAC
3501 GTCAAATCAG ATAGAATAGA GCATTTACCA GTGGTCGATG GCCTGGTCAG
3551 TCCTGTGCCG GGTGACTTAG GACCAGGCAC GTCAGCTCTC TGAGCCTCCC
3601 CTTCCCTTGT TGTCAAGG GAATAGAAGC AGAAGAAGCT GAGAGCCTCC
3651 CTATTCCCAG ATGCCCTGGT GGAATGACCT GCCTCTCTGC CGTTTCTGCC
3701 AACGTGTTGG TGCTATAAGC TGCTTCAAAT ACCAGTTTGT CTGTAGTGTG
3751 TACTCACCTA ATCACTTGTT ATCCAGTGCC TGTTCAGGT TTATGGACTT

3801 AACTATTTCT GTGATGTTTC ATTTT TAGCC ATGTTAACTC CTAACACATA
3851 TTCTCTTATG TCTCAGTAAA GTTTCATTG ATAAGTTGTT GAGATTCTGT
3901 TATTTGATAA TATTCTTCGG CTGTCCATCC AGCATCTTAA TCACTTTAAA
3951 ACTGTGATTG TTATTGCAA CTCTGTTCTT TGGAAAGAAT AAAAGCATT
4001 TTTTCACTT GCTAACATGC TCACAAATGT GAGAGAAGAG TCATTAAAAG
4051 CTTTACTTAC TGGGTCAGTG CGTCATTGAC TCCTTTCTGT GTTTGTCCCA
4101 ATAAATTAAT AAAAGACCAA AAAAAAAAAA AAAAAAAAAA AAAAAAA

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Figure 3: cDNA sequence of mGy12 variant 2 (SEQ ID NO:3)

1 GCAGCGGCGG CGGCGGCGAC GACGGCGAAG AGTTCATATG GGAAGGACTT
51 TGGGGTGAGC ATCTTCTCTA TTCCAGCTG GCTTTTCTGA TTCACCCAC
101 CATTAAAAAC CTGGAGGCAC TGGGCCACAC AAAGCCTTGC TGATTTTCAG
151 AAAGAAGACT CATCAAAGAT GTCCAGCAAG ACGCAAGCA CCAACAGCAT
201 AGCCCAAGCC AGGAGAACTG TGCAGCAGCT GAGATTGGAA GCCTCCATCG
251 AAAGAATAAA GGTCTCAAAA GCATCAGCAG ACCTGATGTC ATACTGTGAG
301 GAGCATGCCC GGAGCGACCC CCTGCTGATG GGCATACCGA CCTCAGAAAA
351 CCCGTTCAAG GATAAGAAGA CCTGCATCAT CTTATAGTGG ACCAGGAAGC
401 GCCCCTTGCC TCTTAACGCA AACCACAGCA GCAACCTGAA GGGATTCCCTT
451 CAGCTTACCT GGTAACCACA GCTAGTAACT AAAACACCCT TCTCTCGGAA
501 TAATAGACCC TGAAGTCTCT CTTTTTCAAG TTGTCCTTTC TTCACCCTTT
551 ACTGATTAA TACAGAATAA CAATCTTATT TTCTATTGA TAACTATGGT
601 ATCATATTGG GTTACTGTAT AAGGAAAATG GCAGGGGAGT TGTGGGAAGC
651 TTGTCTTTAC AAAATATAAT TGATTAAGAT ATGTCAAGAC CTACATTGTC
701 TAAGCACCAG CAAATTAAAA TGTCGAGAAT CACTTCAGTC AAAAACCTTT
751 ATATTCTGTT CTTAATAATG TTTGTGCCAA CCTATATCCC ATGTAAGGGA
801 TCTGGGGAGG AGGCATGTGT CTACAACCAT ACCTTTTTC ACTATGGGCA
851 CTAACCACCC TGAAACTTCC TCGGTAGCT CCCTCCCTTC AGAGTTACAT
901 CATTATCTG ACTCTGTGTA GGTAAATTC CGTGAAATT TTGTACAAAA
951 AAAAGGTAAT GAAAGAACGT TGCAAAGATC ATCTGCATTA TAATGAGTTG
1001 ATGCTGTCTCT CACTCCTCTC TTGGAATTGT GCTGGCCCCT TAGTCTACAA
1051 TAAACTGTGC CAATTAAAAA CCTAAGGCTA AAAGTAAAG CCCTTTGATG
1101 GGGTCTTAAC TCATATCAGT CATTTGGGCT TCTCTGATCC TGAGGCTAAG
1151 AAAGGGGAAG AGACCCTCAG GAGGCAGCTT CCACTCCAGG GCTCTTGATC

1201 TCTGCTGGAT TGGGGGTGGC CACCTCAGAA ACTTCCACCC TCATGACTGG
 1251 AATGGAAGAG GGGACCGAGA GCCTCACAAT CTCGGAGAGG GAGGAGAAAT
 1301 TCTTAAAAAC AGCTGCTCTC CTGCGCCCAG CTTACAGGC AGCCCTGCCC
 1351 CTTTCTCCTC ACCAGCATGG TACCTGCCCT TACTGCTAGA GCAGCTGCTT
 1401 GTAGAGGGAC ATTCCCTCCT TCCCAGTTTT AACTGGTGGA CCACAGTGGG
 1451 GGGAAAAACA TTCAAGCGAT ATAAAGACAC TTGGGCTCTT TGCAGATGCC
 1501 TATACTTCCA ACAC~~T~~ACCAT GTCCACAAAC CACCCTGGGG GAGGGCCCTT
 1551 CCAAAGGGAG GCTTGCTAGT TTCAGCGTCT AGCAGTTGGG TCCTCACTTT
 1601 TACTCCAATT GTGAAAATAG CCCACGTACC CTCGCAGTGT CCAGTAGGGA
 1651 TCCCAGAGGC ACATAACCAA GAAAGGATTT TGACTTTGTC ACAGTGACTA
 1701 TTTAA~~A~~ATAA TCTATTCGAA GTCCAAACCA AACACAAAGC CTGTGATATT
 1751 TTAGGTTATT AAGGTA~~A~~CTG CTAATGAAGG ATTTTAAAA GTGTCTCAA
 1801 AAAGGACTTA GCCCGGGGAG TTGTTTATAA AATTTC~~C~~CCC ACTTGATAC
 1851 AGTGTGCACT AAAAGAAAAT GTATTTTAAT ATCTAATGCC TGGGCTCTGA
 1901 GCGTCATGCT TCTTGGTGGT AACATGCAG TCCTGTTCCT AAGTGACTCA
 1951 GAGGCATCAG AATTTCTCCA CGT~~T~~ACCCAT CTGCTTGGA CTCGGA~~A~~CTG
 2001 AGCGTGTGAA ATCCATAGCG CTGCCACAA CCTGTTCTCA CTGCTTAGCT
 2051 CCCAGCTGGA TTAAAGACAC CTGCTCAGGC GGGAGAGAGA GAGAGAGAGC
 2101 GAGCTTTTAC CTTGGAAAAG GTAAAGATGG AAATGTACAC CAAAAAGAC
 2151 AATTTT~~T~~TACA TTTAATGGAA CATTC~~T~~TTTT TTTTACAAGT ATATTTTCT
 2201 ACTGATAGTT TCAGAACT AATCTTATAT TCACTCTAAT CT~~T~~AAACATG
 2251 TTTCTTTAAA TATTTATAAG GCAGTTTATT ACAGAATATT TTCATGCAAT
 2301 CATGTGCACA TTATTGGTAG CAAACATAGT ATATCCTTTA G~~T~~ACTTTAGC
 2351 ATATTTTGT TAAATACTT TTAATG~~T~~TAA GAAATGA~~A~~CT TGAGGTC~~C~~CA
 2401 GGAGGTTTG TTGCCTTTT ATTGATTAGA GACAATAAAT ATCTTGTAAC

2451 TTCCTAACCA GATCTGAGCT GTGCTCACAA TAATAATAAT GAAATCAGAT
 2501 TCTTTGATGC TGGACTCAGG AGGGAAATCA TTAGCCAACT GTTGACTTAC
 2551 TTATAGCTAG ATGTCTATGT GAGAAAGTAT AATATATATA TATACACATA
 2601 TATATGACAT GTAAGAGTCA CTTTATTFTA TCTGTCTTTG TTCACTTATG
 2651 AAGCCGGTAA CTGCAGCAGT ATGTTGGTGA TGTATGATG CACAGAAGTC
 2701 CCATGTGGAG TGTTTTTCCC AACTGACAA CTTGGCCTCC TTTCTGTGTG
 2751 TTCAGTCTGT TGCTGAACT AACACTCCCG CGAGCACTAT ACTCTTTATA
 2801 CTCTGATCCC CCTAGTTCAT CTTAAATTG TCTGTGGCCC TGGCAAGATA
 2851 GCGTACACAA GATTCCATGA CTCCAGAGCA TCTTGAAGAA ACATACATAT
 2901 TTTGAAAGAG GGGAAATGTA GCAGATAGTT CACAAGCTGC GGGTTGTAGC
 2951 TAAATATTCC ATTTCTTTGA AATCATGTTT CTAAATCTT TACCATCAGA
 3001 AAGAAAAGGA GTGTCATACA CTTTCAAGGG AAGGCTTGGT CTGCGTTTTC
 3051 TGTGTTTGA TTATTTTAT ACTTGTCTGA TCTTTAAGCT ATCCATGGGG
 3101 GAAATTTTAT ACCAACGAGT TAATAATTCT CATTCATCGT TTACACAATG
 3151 TAACATGTGT CATACTGGGG CCAGCGAGAT GGCTCAGTAG GTAAAGGTGC
 3201 TTGATGCTAA GCCCGGCAGC CTGTGTTTCA TCTACAGGAT GCACAACATA
 3251 AAAGAAAAGA TCTGATTCCC ACAGGTTCTC TTCTGACCTA CACACACACA
 3301 CACTAAAATA ACATTTAAAA ATATGTGCCA AATTATATTT GTTCGGGTGC
 3351 CACCTTCCAC CAGCTTACCA CTACGGTAGA ACTGTCAAAT TCATCTCCCT
 3401 GAATTTGTCT TAAAGGGGTG TCCATGCACA GGCCCAAGAG TCACCTCCAA
 3451 TGAAATAAAT GTAATACTGA AGTATGCCAT GATGTTTGTI GTTTTCTTTT
 3501 ATCGTAAGCC TGTAAGCAGG AAAAAACGT CAAATCAGAT AGAATAGAGC
 3551 ATTTACCAGT GGTGATGGC CTGGTCAGTC CTGTGCCGGG TGACTIONTGA
 3601 CCAGGCACGT CAGCTCTCTG AGCCTCCCCT TCCCTTGTTG TCACAAGGGA
 3651 ATAGAAGCAG AAGAAGCTGA GAGCTCCCT ATTCCAGAT GCCCTGGTGG
 3701 AATGACCTGC CTCTCTGCCG TTTCTGCCAA CGTGTGGTG CTATAAGCTG

3751 CTTCAAATAC CAGTTTGTCT GTAGTGTGTA CTCACCTAAT CACTTGTTAT
3801 CCAGTGCCTG TTCTAGGTTT ATGGACTTAA CTATTCTGT GATGTTTCAT
3851 TTTTAGCCAT GTTAACTCCT AACACATATT CTCTTATGTC TCAGTAAAGT
3901 TTCATTTGAT AAGTTGTTGA GATTCTGTTA TTTGATAATA TTCTTCGGCT
3951 GTCCATCCAG CATCTTAATC ACTTTAAAAC TGTGATTGTT ATTTGCAACT
4001 CTGTTCTTTG GAAAGAATAA AAGCATTTTT TTTCATTGTC TAACATGCTC
4051 ACAAATGTGA GAGAAGAGTC ATTAAAAGCT TTACTTACTG GGTCAGTGCG
4101 TCATTGACTC CTTTCTGTGT TTTGCCCAAT AAATTAATAA AAGACCAAAA
4151 AAAAAAAAAA AAAAAAAAAA AAAAA

Figure 4: amino acid sequence of human G γ 12 (SEQ ID NO:4)

1. MSSKTASTNN IAQARRTVQQ LRLEASIERI KVSASADLM SYCEEHARSD
51. PLLIGIPTSE NPFKDKKTCI IL

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